Mapping the wildlife at your schoolyard

Mapping Your School Site

LESSON OVERVIEW

Students will work in teams to make a map of their school grounds, note major features, and observe and record wildlife observations.

SUGGESTED GRADE LEVELS

- 2 – 8

ENDURING UNDERSTANDINGS

- Maps help organize information into a more easily understood format.
- Wildlife comes in all shapes and sizes and can be found just about anywhere.

OBJECTIVES

Students will:

- Map the major features of their schoolyard.
- Identify sources of food, water, shelter and space for wildlife.
- Observe and record wildlife sightings and wildlife "signs" on the school grounds.

ARIZONA DEPARTMENT OF EDUCATION STANDARDS

Grade	Science
2	S1-C2-O1; S1-C2-O3; S1-C2-O4; S2-C2-O1
3	S1-C2-O1; S1-C2-O5; S2-C2-O1; S4-C3-O1; S4-C3-O2
4	S1-C2-O1; S1-C2-O4; S1-C2-O5; S4-C3-O1
5	S1-C2-O1; S1-C2-O4; S1-C2-O5

Grade	Science
6	S1-C2-O1; S1-C2-O4; S1-C2-O5
7	S1-C2-O1; S1-C2-O4; S1-C2-O5
8	S1-C2-O1; S1-C2-O4; S1-C2-O5

Note: The full text of these standards can be found in Appendix A.

TIME FRAME

- 1 – 2 days (45 minutes each day)

MATERIALS

Each group will need:

- Compass
- Large sheet of butcher paper
- Black marker
- Pencil

- Crayons
- Flagging
- Large piece of cardboard (optional)

TEACHER PREPARATION

- Choose an area to map. It should have a variety of plants and other features, and be large enough for each group to have between 30 and 60 square feet.
- Use flagging to mark off sections for each group.
- Cut a large piece of butcher paper for each group (3 feet by 2 feet should be sufficient). You may also cut cardboard to serve as a support for the paper.
- Lay down the pieces of paper together.
- On these papers, draw a large outline map of the school site. Be sure to include major features such as buildings, parking lots, paths, fences, etc. Each group should have some of these features. (Optional: you may skip this step for older students and have them make a scale map of their assigned section.)
- Prepare a map key so that all groups will use the same symbols. Use symbols to represent trees, grass, dirt, rocks, etc. (Optional: allow the class to determine the symbols, but make sure all groups use the same symbols.)

TEACHER BACKGROUND

Schoolyards provide habitat for wildlife. Right now, there are animals feeding, resting or looking for shelter on your school grounds. Why are they there? Because your school site provides food, water, shelter and space for wildlife.

In this activity, students can learn more about their school grounds, and the types of animals that live there, by mapping the school site. By creating a map, students will improve their powers of observation and their recording skills. Students will also have the opportunity to observe wildlife, look for wildlife signs, and record their observations. They may be surprised at the different kinds of food, water, and shelter their school site provides.

SUGGESTED PROCEDURES

1. Lay out the map sections to represent the entire study area. Familiarize the students with the study area by having them identify features on the map. Explain how to use the compass.
2. Explain that each team will be assigned a section of the study area to map, and that each team will draw in any natural or man-made structures, such as buildings, trees, bushes, etc. Be sure students understand that they need to use the symbols that have already been created.
3. Inform students that they are to note different types of wildlife they observe, and record it on their map. They can draw a picture or write down the name of the animal where they observe it. In addition, they should also record any wildlife signs (tracks, burrows, spider webs, nibbled leaves, eggs, nests, feathers, droppings, etc.). They must also indicate north on their map.
4. Divide the group into teams of three or four students.
5. Give each team a section of the map and their materials.
6. Suggest that each team find a good vantage point from which to observe and record features on their map. However, they may need to move around to see all of the details.

7. Allow about 30 minutes for students to create their maps. Periodically check with each team to see how they are doing and lend assistance as needed.
8. When all of the groups have finished, bring the teams together. Lay out all of the map sections in order to match the study site. Spend some time comparing the features. Ask students:
    a. What animals did they observe?
    b. What were the animals doing?
    c. What types of food, water, and shelter were available?
    d. What types of animal "signs" did they observe?

ASSESSMENT

- Student generated map.
- Informal observation and discussion

EXTENSIONS

- Make a new map every quarter or season. Compare the types and numbers of animals that you observe.
- Have students design and carry out a research project in which they attempt to modify their section in order to increase wildlife presence. Some possible changes include making a bird or bat house, adding a pond, or removing non-native species. Compare the site before and after modifications were made.
- Have students make observations about plant and animal distributions at the school. These observations can lead to inquiry investigations as the students attempt to determine the reasons for the different distributions.
- Conduct a study of the entire school grounds. Determine the best location for wildlife. Make a schoolyard habitat to promote wildlife at your school.

Appendix A: Arizona Department of Education Standards – Full Text

Science Standards

Grade	Strand	Concept	Performance Objective
2	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 3 – Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data 4 – Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper)
		3 – Analysis and Conclusions	1 – Organize data using graphs (i.e., pictograph, tally chart), tables, and journals
	2	2 – Nature of Scientific Knowledge	1 – Identify components of familiar systems (e.g., organs of the digestive system, bicycle)
3	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 5 – Record data in an organized and appropriate format (e.g., t-chart, table, list, written log)
	2	2 – Nature of Scientific Knowledge	1 – Describe how, in a system (e.g., terrarium, house) with many components, the components usually influence one another
	4	3 – Organisms and Environments	1 – Identify the living and nonliving components of an ecosystem 2 – Examine an ecosystem to identify microscopic and macroscopic organisms
4	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 4 – Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary) 5 – Record data in an organized and appropriate format (e.g., t-chart, table, list, written log)

Science Standards Continued

Grade	Strand	Concept	Performance Objective
4	4	3 – Organisms and Environments	1 – Describe ways various resources (e.g., air, water, plants, animals, soil) are utilized to meet the needs of a population
5	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 4 – Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary) 5 – Record data in an organized and appropriate format (e.g., t-chart, table, list, written log)
6	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 4 – Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers) 5 – Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs
7	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 4 – Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers) 5 – Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs

Science Standards Continued

Grade	Strand	Concept	Performance Objective
8	1	2 – Scientific Testing (Investigating and Modeling)	1 – Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry 4 – Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers) 5 – Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs